

Amendments to the Claims:

The following claims will replace all prior versions of the claims in this application:

1. (Currently Amended) A gateway digital radio broadcast system for scheduling processing over the air transmissions of data content, said gateway digital radio broadcast system comprising:

a gateway, the gateway comprising a processing system; and and a memory coupled to the processing system;

said processing system comprising:

a network inbound queue for the reception of data content and instructions from a content provider ~~related to data content~~;

a scheduler for processing said instructions from the content provider to determine broadcast times and schedule for said data content to be received by [[a]] digital radio broadcast ~~receiver of a user receivers of users, said scheduler determining said broadcast times and schedule based upon said instructions from the content provider without any user request for said data content;~~

an encoder for encoding said data content for digital radio broadcast transmission;

an addressing module for processing said instructions from the content provider for extracting addressing information; and

an outbound queue for storing said encoded data content,

the digital radio broadcast system processing the data content to be pushed to the digital radio broadcast receivers of the users via digital radio broadcast transmission without user-initiated requests for the data content.

2. (Currently Amended) A gateway digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 1, wherein said gateway further comprises a device profile database, said device profile database holding profiles associated with IBOC enabled consumer devices, and each of said profiles defining one or more specific data content formats for said broadcast transmission via said outbound queue to one or more clients.

3. (Currently Amended) A gateway digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 2, wherein said instructions further comprise a request for identifying said one or more specific data content formats associated with one or more specific clients.

4. (Currently Amended) A gateway digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 1, wherein said gateway further comprises an identification (ID) processor for extracting a unique ID associated with a sender of said instructions, assigning a unique ID associated with Push transmissions, and storing said unique ID associated with the sender of said instructions and said unique ID associated with Push transmissions.

5. (Currently Amended) A gateway digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 1, wherein said gateway further comprises an authenticator for authenticating a sender of said instructions.

6. (Currently Amended) A gateway digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 4, comprising a network outbound queue, said network outbound queue transmitting data content to said sender of said instructions.

7. (Currently Amended) A gateway digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 6, wherein said digital radio broadcast transmission is an in-band on-channel (IBOC) digital radio broadcast transmission.

8. (Currently Amended) A gateway digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 1, wherein said gateway further comprises a bandwidth module for bandwidth management, said bandwidth module maintaining queues and prioritizing flows per quality of service (QoS) traffic attributes while managing resources.

9. (Currently Amended) A gateway digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 8, wherein said queues comprise an active queue and a passive queue, said active queue storing data content currently being transmitted and said passive queue storing pushed and pulled data content.

10. (Currently Amended) A gateway digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 1, wherein said gateway further comprises a cache for holding said data content to be broadcast.

11. (Currently Amended) A gateway digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 1, wherein said instructions comprise precompiled binary data for transmission.

12. (Currently Amended) A gateway digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 1, wherein said scheduler further processes information defining various time zones for broadcasting said encoded data content.

13. (Currently Amended) A gateway digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 1, wherein said instructions include a unique identifier, said identifier used in targeting said transmitted data content to a specific user agent.

14. (Currently Amended) A gateway digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 13, wherein said identifier is an URI or a numeric value.

15. (Canceled)

16. (Currently Amended) A gateway digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 1, wherein said encoder is a Turbo Broadcast Layer (TBL) encoder.

17. (Currently Amended) A gateway digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 1, wherein said gateway communicates to external networks via any of the following protocols: point-to-point protocol (PPP), hypertext transfer protocol (HTTP), or wireless access protocol.

18. (Currently Amended) A gateway digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 1, wherein said data content is in any of the following formats: binary, plain text, HTML, XML, or WML.

19. (Currently Amended) A gateway digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 1, wherein said gateway comprises a timer for tracking a predefined timeout for which transmission of data content occurs.

20. (Currently Amended) A gateway digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 1, wherein said gateway is networked for synchronized scheduling with one or more similar gateways.

21. (Currently Amended) A gateway digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 1, wherein said instructions further include any of the following: time at which transmission is to commence, time at which transmission is to cease, or rate at which data content to be transmitted needs to be repeated.

22. (Currently Amended) A gateway digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 1, wherein said gateway receives data content over a network.

23. (Currently Amended) A gateway digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 22, wherein said network comprises any of the following: local area network, wide area network, wireless network, or Internet.

24. (Currently Amended) A gateway digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 1, wherein said gateway further comprises a network database identifying other databases from which information can be received.

25. (Currently Amended) A gateway digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 1, wherein said encoded data content is in a digital broadcasting format suitable for reception via a digital consumer radio receiver.

26. (Currently Amended) A method for scheduling processing over the air transmissions via using a digital radio broadcast system comprising a gateway, said method comprising the steps of:

a. receiving at the gateway of the digital radio broadcast system data content and instructions from a content provider relating to broadcast of data content, the gateway comprising a processing system;

b. authenticating said content provider;

c. processing said instructions from the content provider to determine broadcast times for said data content to be received by a digital radio broadcast receiver of a user receivers of users, the broadcast times being determined based upon said instructions from the content provider without any user request for said data content the digital radio broadcast system processing the data content to be pushed to the digital radio broadcast receivers of the users via digital radio broadcast transmission without user-initiated requests for the data content;

d. receiving said data content via a network;

e. encoding said data content for digital radio broadcast transmission, and transmission using said processing system; and

f. storing said encoded data content at a memory of the gateway.

27. (Currently Amended) A method for scheduling processing over the air transmissions via using a digital radio broadcast system comprising a gateway, as per claim 26, wherein said method further comprises the step of accessing a subscription profile database to identify one or more specific data content formats associated with one or more clients.

28. (Currently Amended) A method for scheduling processing over the air transmissions via using a digital radio broadcast system comprising a gateway, as per claim 27, wherein ~~wherein~~ said instructions further comprise a request for identifying said one or more specific data content formats associated with one or more specific clients.

29. (Currently Amended) A method for scheduling processing over the air transmissions via using a digital radio broadcast system comprising a gateway, as per claim 26, wherein said encoded data content is in a digital broadcasting format suitable for reception via a digital consumer radio receiver.

30. (Currently Amended) A method for scheduling processing over the air transmissions via using a digital radio broadcast system comprising a gateway, as per claim 26, wherein said method further comprises the step of maintaining a cache for holding said encoded data content for transmission.

31. (Currently Amended) A method for scheduling processing over the air transmissions via using a digital radio broadcast system comprising a gateway, as per claim 26, wherein said instructions comprise a unique identifier, said identifier used in targeting encoded data to a specific client.

32. (Currently Amended) A method for scheduling processing over the air transmissions via using a digital radio broadcast system comprising a gateway, as per claim 31, wherein said identifier is an URI or a numeric value.

33. (Currently Amended) A method for scheduling processing over the air transmissions via using a digital radio broadcast system comprising a gateway, as per claim 26, wherein said instructions comprise information defining various time zones for broadcasting encoded data content.

34. (Currently Amended) A method for scheduling processing over the air transmissions via using a digital radio broadcast system comprising a gateway, as per claim

26, wherein said method further comprises the step of converting said data content into a specific format.

35. (Currently Amended) A method for scheduling processing over the air transmissions via using a digital radio broadcast system comprising a gateway, as per claim 34, wherein said specific format is any of the following: plain text, binary data, HTML, WML, or XML.

36. (Currently Amended) A method for scheduling processing over the air transmissions via using a digital radio broadcast system comprising a gateway, as per claim 26, wherein said network comprises any of the following: local area network (LAN), wide area network (WAN), wireless networks, HFC Network, LMDS satellite network, or the Internet.

37. (Canceled)

38. (Canceled)

39. (Currently Amended) An article of manufacture comprising a computer readable storage medium having computer readable program code embodied therein, for scheduling processing over the air transmissions via using a digital radio broadcast system comprising a gateway, that causes a the computer readable program code causing the processing digital radio broadcast system to:

a. receive at the gateway data content and instructions from a content provider relating to broadcast of data content;

b. authenticate said content provider;

c. process said instructions from the content provider to determine broadcast times for said data content to be received by a-digital radio broadcast receiver of a user receivers of users, the broadcast times being determined based upon said instructions from the content provider, the computer readable program code causing said digital radio broadcast system processing said data content to be pushed to the digital radio broadcast receivers of said users via digital radio broadcast transmission without user-initiated requests for said data content without any user request for said data content;

- d. receive said data content via a network;
- e. encode said data content for digital radio broadcast transmission, and
- f. store said encoded data content.

40. (Currently Amended) An article of manufacture comprising a computer usable readable storage medium having computer readable program code embodied therein for scheduling processing over the air transmissions via using a digital radio broadcast system comprising a gateway, as per claim 39, wherein said article further comprises computer readable program code ~~adapted to cause a processing for causing the digital radio broadcast~~ system to encode said data content in a digital broadcasting format suitable for reception via a digital consumer radio receiver.

41-64. (Canceled)

65. (Currently Amended) A method for scheduling processing over the air transmissions via using a digital radio broadcast system comprising a gateway, as per claim 26, wherein said method further comprises transmitting said encoded data via IBOC radio broadcast transmission to clients based upon said broadcast times and said addressing information.

66. (Currently Amended) A digital radio broadcast system for scheduling processing over the air transmissions of data content, comprising: according to claim 1, further comprising

a the gateway for scheduling over the air transmissions of data content according to claim 1; and

a content provider center configured to communicate with said gateway.

67. (Currently Amended) A digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 66, wherein said gateway further comprises a subscription client device profile database, said subscription client device profile database holding profiles associated with said clients, and each of said profiles defining one or more specific data content formats for said broadcast transmissions via said outbound queue to one or more consumer client devices.

68. (Currently Amended) A digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 67, wherein said instructions further comprise a request for identifying said one or more specific data content formats associated with one or more specific clients.

69. (Currently Amended) A digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 66, wherein said gateway further comprises identification (ID) processor for extracting a unique ID associated with a sender of said instructions, assigning a unique ID associated with Push transmissions, and storing said unique ID associated with the sender of said instructions and said unique ID associated with Push transmissions.

70. (Currently Amended) A digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 69, wherein said gateway further comprises an authenticator for authenticating a sender of said instructions.

71. (Currently Amended) A digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 69, further comprising a network outbound queue, said network outbound queue transmitting data content to said sender of said instructions.

72. (Currently Amended) A digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 71, wherein said digital radio broadcast transmission is an in-band on-channel (IBOC) digital radio broadcast transmission.

73. (Currently Amended) A digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 66, wherein said gateway further comprises a bandwidth module for bandwidth management, said bandwidth module maintaining queues and prioritizing flows per quality of service (QoS) traffic attributes while managing resources.

74. (Currently Amended) A digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 73, wherein said queues comprise an active queue and a passive queue, said active queue storing data content currently being transmitted and said passive queue storing pushed and pulled data content.

75. (Currently Amended) A digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 66, wherein said gateway further comprises a cache for holding said data content to be broadcast.

76. (Currently Amended) A digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 66, wherein said instructions comprise precompiled binary data for transmission.

77. (Currently Amended) A digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 66, wherein said scheduler further processes information defining various time zones for broadcasting said encoded data content.

78. (Currently Amended) A digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 66, wherein said instructions include a unique identifier, said identifier used in targeting said transmitted data content to a specific user agent.

79. (Currently Amended) A digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 78, wherein said identifier is an URI or a numeric value.

80. (Canceled)

81. (Currently Amended) A digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 66, wherein said encoder is a Turbo Broadcast Layer (TBL) encoder.

82. (Currently Amended) A digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 66, wherein said gateway communicates to external networks via any of the following protocols: point-to-point protocol (PPP), hypertext transfer protocol (HTTP), wireless access protocol, satellite networks, or wireless access protocol.

83. (Currently Amended) A digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 66, wherein said data content is in one of the following formats: binary, plain text, HTML, XML, or WML.

84. (Currently Amended) A digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 66, wherein said gateway comprises a timer for tracking a predefined timeout for which transmission of data content occurs.

85. (Currently Amended) A digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 66, wherein said gateway is networked for synchronized scheduling with one or more similar gateways.

86. (Currently Amended) A digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 66, wherein said instructions further include any of the following: time at which transmission is to commence, time at which transmission is to cease, or rate at which data content to be transmitted needs to be repeated.

87. (Currently Amended) A digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 66, wherein said gateway receives data content over a network and said network comprises any of the following: local area network, wide area network, wireless network, HFC networks or Internet.

88. (Currently Amended) A digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 66, wherein said gateway

further comprises a network database identifying other databases from which information can be received.

89. (Currently Amended) A digital radio broadcast system for scheduling processing over the air transmissions of data content, as per claim 66, wherein said encoded data content is in a digital broadcasting format suitable for reception via a digital consumer radio receiver.

90. (New) A digital radio broadcast system for processing over the air transmissions of data content according to claim 1, the digital radio broadcast system comprising an exciter for receiving the encoded data content from the gateway and for broadcasting the encoded data content over the air via digital radio broadcast transmission.

91. (New) A method for processing over the air transmissions using a digital radio broadcast system comprising a gateway according to claim 26, comprising broadcasting the encoded data content over the air via digital radio broadcast transmission using an exciter.

92. (New) An article of manufacture comprising a computer readable storage medium having computer readable program code embodied therein for processing over the air transmissions using a digital radio broadcast system comprising a gateway according to claim 39, wherein said article further comprises computer readable program code for causing the digital radio broadcast system to broadcast the encoded data content over the air via digital radio broadcast transmission using an exciter.

93. (New) A digital radio broadcast system for processing over the air transmissions of data content, comprising:

a gateway for receiving data content and instructions from a content provider, the gateway comprising a processing system and a memory coupled to the processing system, the gateway processing the instructions from the content provider to determine broadcast times and schedule for the data content, the gateway encoding the data content for digital radio broadcast transmission to digital radio broadcast receivers of users; and

an exciter for receiving the encoded data content from the gateway and for broadcasting the data content over the air via digital radio broadcast transmission,

said digital radio broadcast system pushing said data content to the digital radio broadcast receivers of said users via digital radio broadcast transmission without user-initiated requests for said data content.